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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/069,741

02/26/2002

Delphine Legrand

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INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER

AGHDAM, FRESHTEH N

ART UNIT

PAPER NUMBER

2611

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,741

Applicant(s)

LEGRAND ET AL.

Examiner

Freshteh N. Aghdam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments, see page 9, filed 11/29/2005, with respect to the rejection(s) of claim(s) 2-3 and 7-10 under Denno et al, Oura et al, and Junell have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Denno et al and Junell.

Regarding to claims 1, 4, and 6, in page 7, applicant argues that the claimed invention is not taught by Denno "The office action fails to identify where the Denno '067 reference teaches calculation means and means for detecting and correcting phase jumps, as claimed. Applicant fails to recognize where the cited portions of the Denno '067 reference teach phase jump detection and correction and initial and final sequences, as claimed. "

Denno teaches a communication system that includes a receiver to receive phase shift keying (i.e. PSK) modulation signals S and comprising estimation means for estimating a frequency error relating to a signal based on a phase signal (Col. 2, Lines 18-22; Col. 3, Lines 13-31) wherein the receiver comprises calculation means for calculating a phase sequence based on decisions made on symbols and means for detecting and correcting phase jumps in this initial sequence to supply a final sequence to the frequency error estimation means (Col. 3, Lines 13-31, Col. 5, Lines 20-64). One of ordinary skill in the art would clearly recognize that it is inherent for any

communication system to have a transmitter to transmit a signal to a receiver (Fig. 4, means 20, 21, 22, and 45; Abstract; Col. 9, Lines 58- Col. 10, Line 35).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Denno et al (US 5,287,067).

As to claims 1, 4, and 6, Denno teaches a communication system that includes a receiver to receive phase shift keying (i.e. PSK) modulation signals S and comprising estimation means for estimating a frequency error relating to a signal based on a phase signal (Col. 2, Lines 18-22; Col. 3, Lines 13-31) wherein the receiver comprises calculation means for calculating a phase sequence based on decisions made on symbols and means for detecting and correcting phase jumps in this initial sequence to supply a final sequence to the frequency error estimation means (Col. 3, Lines 13-31, Col. 5, Lines 20-64). One of ordinary skill in the art would clearly recognize that it is inherent for any communication system to have a transmitter to transmit a signal to a receiver (Fig. 4, means 20, 21, 22, and 45; Abstract; Col. 9, Lines 58- Col. 10, Line 35).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denno et al, further in view of Junell (US 6,181,755).

As to claims 2 and 7, Denno teaches a method of detecting and correcting phase jumps in an initial sequence of symbol phases coming from a phase shift keying modulation comprising: modifying (i.e. using the recursive least square algorithm) the initial sequence so as to produce a plurality of modified sequences which each compensate for a phase jump configuration (Fig. 4, means 20, 21, 22, and 45; Abstract; Col. 3, Lines 13-31, Col. 5, Lines 20-64; Col. 9, Lines 58- Col. 10, Line 35). Denno is silent about calculating for the initial sequence and the modified sequences a mean difference between the initial or modified phases and the phases produced by the corresponding straight line equation, said final sequence being formed by the sequence whose mean difference is minimal. Junell teaches using a straight line fitting by applying the least square sum method in frequency error estimation to minimize the error (Col. 10, Lines 62-67; Col. 11, Lines 6-29). It is well known that the minimized error is calculated based on the phases produced by the straight line equation and the initial phase is in the direct relationship with the mean difference (i.e. the mean difference is a function of the estimated error) see the reference (RLS) provided as pertinent art with

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this office action. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Denno with Junell in order to converge to the optimal solution rapidly and also the RLS algorithm has a good tracking ability.

As to claims 9-10, one of ordinary skill in the art would clearly recognize that implementing the steps of a method of detecting and correcting phase jumps by a computer program in a processor is well known in the art.

Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denno et al and Junell, further in view of Oura et al (US 6,038,267).

As to claims 3 and 8, Denno and Junell teach all the subject matters claimed above, except for obtaining the modified signal values from a phase signal phase-group by phase-group. Oura further teaches obtaining the modified signal values from a phase signal phase-group by phase-group (Col. 5, Lines 49-57). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Oura with Denno and Junell in order to accurately compensating for the phase jumps (Col. 5, Lines 58-64).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Denno et al, further in view of Oura et al.

As to claim 5, Denno teaches all the subject matters claimed above, except for obtaining the modified signal values from a phase signal phase-group by phase-group. Oura teaches obtaining the modified signal values from a phase signal phase-group by phase-group (Col. 5, Lines 49-57). Therefore, it would have been obvious to one of

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ordinary skill in the art to combine the teaching of Oura with Denno in order to accurately compensating for the phase jumps (Col. 5, Lines 58-64).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is (571) 272-6037. The examiner can normally be reached on Monday through Friday 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Freshteh Aghdam
January 30, 2006


KEVIN BURD
PRIMARY EXAMINER